Portugal

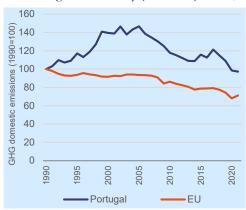
1) Key takeaways

- In 2021, GHG emissions in Portugal were 10.7% below 2019 pre-pandemic levels.
- Over the same period, ETS and Effor Sharing emissions decreased by 25.8% and by 2.5%, respectively.
- Net GHG emissions (i.e. including LULUCF) in 2021 were 13.8% lower than 1990 levels.
- The LULUCF sector removed 6.97 MtCO2-eq on average per year from 2013 to 2020, based on accounting.

2) Greenhouse gas emissions

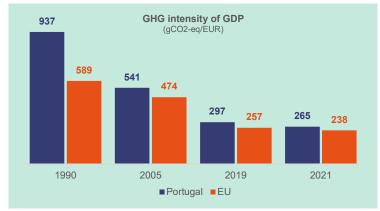


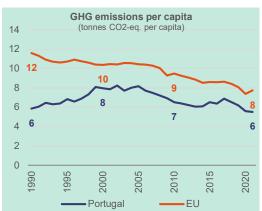
In 2021, approximated domestic greenhouse gas (GHG) emissions in Portugal were 56.8 MtCO2-eq, 1.3% lower compared to 2020 and 10.7% below pre-pandemic levels. Overall, net domestic emissions, including the Land Use, Land Use Change and Forestry (LULUCF) sector, were 13.8% lower than 1990 levels.



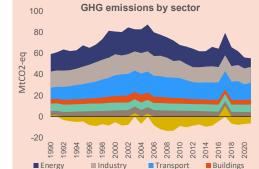
Total domestic GHG emissions					
	1990 (MtCO2-eq)	2005 to 1990 (% change)	2019 to 2005 (% change)	2021 to 2019 (% change)	2021 to 1990 (% change)
Portugal	58	47%	-26%	-11%	-3%
EU	4847	-6%	-21%	-4%	-29%
Total net domestic GHG emissions (including LULUCF)					
Portugal	60	51%	-35%	-21%	-14%
EU	4633	-13%	-26%	-10%	-33%

Note: GHG emissions and removals for 1990-2020 are based on data submitted by EU Member States to the UNFCCC under Regulation (EU) No 525/2013. Figures may change following resubmissions. GHG emissions for 2021 are based on approximated GHG inventories.





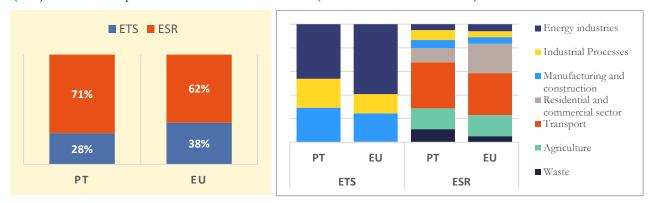
3) Greenhouse gas emissions by sector



	1990 (MtCO2- eq)	2005 to 1990 (% change)	2019 to 2005 (% change)	2021 to 2019 (% change)	2021 to 1990 (% change)
Energy	16.4	55%	-49%	-36%	-49%
Industry	15.5	24%	-19%	-5%	-4%
Transport	10.8	85%	-11%	-9%	49%
Buildings	4.1	74%	-37%	5%	16%
Agriculture	7.1	-6%	3%	3%	0%
Waste	4.1	52%	-28%	-2%	6%
LULUCF	1.2	126%	-384%	-19%	-621%
International aviation	1.5	49%	92%	-54%	30%

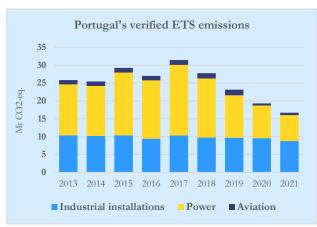
Notes: (1) Energy sector refers to electricity and beat production and petroleum refining, (2) Industry includes fuel combustion in manufacturing and construction and emissions in industrial processes and product use. (3) Buildings include emissions from energy use in residential and tertiary buildings, and energy use in agriculture and fishery sectors.

In 2021, the highest contribution to net GHG emissions in Portugal came from the Transport sector (31%), followed by the Industry sector (29%) and the Energy sector (16%). Emissions from sectors under the Effort Sharing Regulation (ESR) were 71% compared to 62% for the EU as a whole (see shares in the charts below).



4) Emissions under the EU Emissions Trading System (ETS)

In 2021, stationary installations (e.g. power generation and manufacturing industry) in Portugal emitted 16.0 million tonnes of CO2-eq emissions (equal to 28% of Portugal's total GHG emissions). This is 14.4% lower compared to 2020 and 25.8% below pre-pandemic levels. By 2021, emissions from stationary installations were down by 35.0% against 2013 level (i.e. -58.2% to 2005 levels). Aviation emissions covered by the EU ETS were 15.8% higher compared to 2020 but 57.7% below 2019 level.



In parallel, Portugal has raised over EUR 1.7 billion in auction revenues since 2013, available for further climate action and energy transformation. Portugal reported that an average of 93% of revenues was spent for climate and energy purposes over the same period.(*)

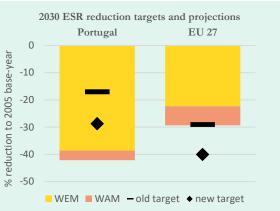
Mt CO2-eq	2013	2020	2021
Power installations	14.3	9.2	7.2
% change since 2013	-	-35.8%	-49.3%
Industrial installations	10.4	9.6	8.8
% change since 2013	-	-7.8%	-15.3%
Aviation (**)	1.18	0.57	0.66
% change since 2013	-	-52.1%	-44.5%

(*) All revenues from auctioning are channelled to the Environment Fund (alongside other revenues) which is financing environmental projects that may or may not be directly related to climate objectives. The amounts reported as spent represent climate change and energy projects paid by the Environmental Fund.

(**) ETS emissions from aviation include flights within the European Economic Area (EEA) and outgoing flights to Switzerland and to the UK.

5) Emissions in Effort Sharing sectors





Note: (1) Verified emissions based on annual inventory review under the Effort Sharing Decision (ESD). (2) Projections as reported by Member States under Reg. (EU) 2018/1999, compiled and checked by the EEA. (3) ESR base-year emissions and targets have been approximately converted into GWP AR4 for comparability. For these reasons, the distances to targets for 2030 are provided for illustrative purposes only (4) WEM = with existing measures, WAM = with additional measures.

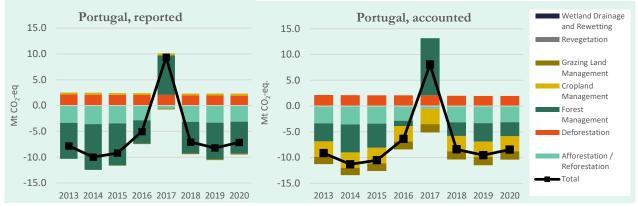
In 2021, effort sharing approximated emissions in Portugal were 40.5 MtCO2eq (equal to 71% of Portugal's total GHG emissions), 5.0% higher than in 2020 but 2.5% lower than 2019 pre-pandemic level.

Between 2013 and 2019, Portugal's emissions have always been below the annual limits. In 2020, effort sharing emissions in Portugal were below the annual limit.

6) Land Use, Land Use Change and Forestry (LULUCF)



Reported quantities under the Kyoto Protocol for Portugal show net removals of -5.6 Mt CO2-eq on average per year for the period 2013 to 2020. In this regard, Portugal contributes with 1.8% to the annual average sink of -320.2 Mt CO2-eq of the EU-27. Accounting for the same period depicts net credits of, on average, -7.0 Mt CO2-eq, which corresponds to 8.4% of the EU-27 accounted sink of -83.4 Mt CO2-eq. Reported net removals are highest for 2014, decrease substantially thereafter, reaching net emissions in 2017, and return to notable removals from 2018 to 2020. Accounted net credits follow the same dynamic with net debits in 2017.



Notes: (1) Charts based on the submissions delivered until May 2022. (2) Data reported for the period 2013-2020, for mandatory and elected LULUCF activities, were submitted by Member States to the European Environment Agency (EEA) and underwent a simulated accounting process developed by the Joint Research Centre (JRC), together with DG CLIMA. (3) Reported data represent the gross annual flux of greenhouse gas from the sector, by activity, according to the IPCC methods for calculation in the framework of the Kyoto Protocol (KP). Accounting is aimed at assessing the impact of policies on climate actions on the actual data, for example as an increase in the sink within the Forest Management activity. (4) The simulated accounting process does not take into account any adjustments or flexibilities that a Member State may apply, for example the purchase of KP credits.

The dominating reported activity is Forest Management with removals in most years. Removals by Afforestation/Reforestation are sizable for all years except 2017. Emissions by Deforestation show moderate quantities, emissions by Cropland Management are negligible, and Grazing Land Management fluctuates with very small quantities between emissions and removals. Removals by Forest Management reach -8.9 Mt CO2-eq in 2014, but year 2017 shows 7.6 Mt CO2-eq. of emissions by Forest Management. The singular situation in 2017 for Forest Management and Afforestation/Reforestation links to the enormous incidence of forest fires which also impacted the EU LULUCF trend.

Credits by Afforestation/Reforestation, Cropland Management and Grazing Land Management and debits by Deforestation contribute in notable quantities to the accounts of Portugal. Sizable credits by Forest Management in 2013 to 2015 turned to debits of 11.1 Mt CO2-eq in 2017 because of the fires but returned to credits in the years thereafter. Also credits by Afforestation/Reforestation have a marked drop in 2017.

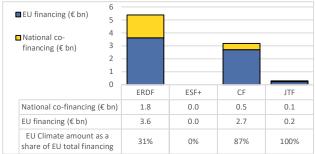
7) Financing Climate Action



Cohesion policy

Portugal's Planned Financing for Climate Actions

(EU financing & national co-financing - 2021-2027 Cohesion Policy)



The chart presents information on investment plans and achievement targets from adopted programmes. Financing for cohesion policy uses a categorisation to provide thematic information on the finances planned.

Source: https://cohesiondata.ec.europa.eu/

Innovation and Modernisation Fund

Innovation Fund (Portfolio of signed projects)

	n.	EUR million
Small Scale Projects	1	4.5
Large Scale Projects	_	_

 $\begin{tabular}{ll} Modernisation Fund & n. & EUR million \end{tabular}$

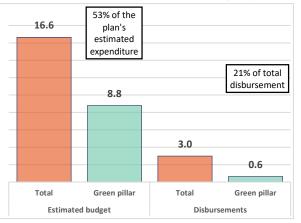
(List of confirmed or approved investment proposals)

non-beneficiary

Recovery & Resilience Facilities

RRF allocations	Grants:	Loans:	% of GDP
(EUR billion)	13.91	2.70	7.9

RRF contribution to the Green pillar in Portugal (€ bn)



This graph displays: 1) the estimated cost of measures attributed by the Commission, in consultation with the Member State, to the green pillar either as primary or secondary assignments; and 2) how disbursements under the RRF (excluding pre-financing) relate to the green pillar.

Source: https://ec.europa.eu/economy_finance/recovery-and-resilience-scoreboard/index.html?lang=en